

The history of the herbarium, School of Botany, University of Melbourne

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Abstract

The herbarium of the School of Botany, University of Melbourne, is large by Australian university standards, and comprises some 100,000 specimens representing all major plant groups. Beginning with the donation of H. M. R. Rupp's Angiosperm collection (excluding orchids) in 1926, it has grown with the input of diverse collectors. This paper traces the herbarium's development from Professor A. J. Ewart's time to the present day, and records his contribution and that of H. B. Williamson, W. H. Nicholls, E. I. McLennan, E. J. Sonenberg and others in the making of a significant botanical resource.

Herman Montague Rucker Rupp (1872–1956) was born on 27 December 1872 at Port Fairy, Victoria, and spent his early years there and at nearby Koroit (Rupp 1926a; Willis 1956; Gilbert 1988). When 11 years old he was sent to the Junior Grammar School, Geelong, and a year later to Geelong Church of England Grammar School. It was during these school years that his early interest in natural history became firmly established. Many years later he wrote: 'I began to collect specimens of wild flowers at the age of about 17, when I was a boarder at the Geelong Grammar School. The name of the headmaster of those days, Mr J. Bracebridge Wilson — an uncle of mine by marriage — needs no introduction in botanical circles, and to him I owe my earliest knowledge of native plants' (Rupp 1926a). Bracebridge Wilson (1828–1895) was headmaster at Geelong Grammar for 32 years and is probably best remembered for his contributions to the study of marine algae.

Rupp went on to win a scholarship to Trinity College at the University of Melbourne studying Theology, and while there won the Wyselaskie scholarship in natural science; he graduated B.A. in 1897. During this period at university he gained some knowledge of the flora of the outlying suburbs of Melbourne, and in the vacations explored the various districts where his father was Anglican Vicar — Coleraine, Buninyong, and Kingston. The extent of his interest in plants is measured by a remarkable series of catalogues he compiled for these areas (Fig. 2). Some of these (e.g. for Merri Creek, which is now surrounded by suburbs), represent valuable early records. His most memorable holiday trip was to the Riverina in N.S.W. where, during the summer of 1894–5, he spent three months with his sister who was living at Hay. Rupp records that 'It happened to be a good season with bountiful summer rains, and I found much to interest me' (Rupp 1926a).

He continues: 'Upon leaving the university I went to Beeac on the north of Lake Colac, where I advanced through the stages of lay-reader, deacon, and priest in the Anglican ministry. A more unpromising field for a

botanist could scarcely be imagined, almost the whole area being occupied by dairying and agricultural farmers' (Rupp 1926a). He does not say if he found it more promising for his ministry.

During the next 40 years Rupp was stationed at a number of different localities, mostly in N.S.W., although he did spend a few years in Tasmania and made occasional trips to Victoria (Fig. 3). He pursued his botanical hobby with vigour whenever possible and became a most competent botanist, a prolific correspondent, and a meticulous recorder of his observations. Arriving at Tamworth in 1903 he began to collect more systematically, and finding so many unfamiliar forms, sought assistance from J. H. Maiden, then Government Botanist of N.S.W. Rupp writes: 'of Mr Maiden's unfailing help and encouragement over the next 20 years or so I can only speak in terms of the deepest gratitude' (Rupp 1926a).

Rupp did not immediately specialize in the orchids, for which work he is best known. Of Copmanhurst during the period 1909–11 he says: 'the epiphytic orchids were numerous and interesting, but it was not until later that the fascination of these constrained me gradually to concentrate on them and their terrestrial relatives' (Rupp 1926a). In fact it was in 1924 that he finally decided the Orchidaceae would be his major concern, and he came to the decision to donate the rest of his collection to the University of Melbourne. This was also the year of his first publication, and he went on to write some 215 articles, and two books on the orchids of NSW (Willis 1956).

Rupp at first offered the collection to his old college, Trinity, in order to honour what he felt was a commitment made some 10 years earlier to the warden of the time, Dr A. Leeper. There followed a delightful and gentlemanly correspondence between Rupp and the current warden, Dr J. C. V. Behan, during which it transpired that the college, not having the room or facilities to house the collection, suggested that the offer be transferred to the University. Behan makes some interesting observations and was something of a prophet: '...in the light of the fact that Melbourne

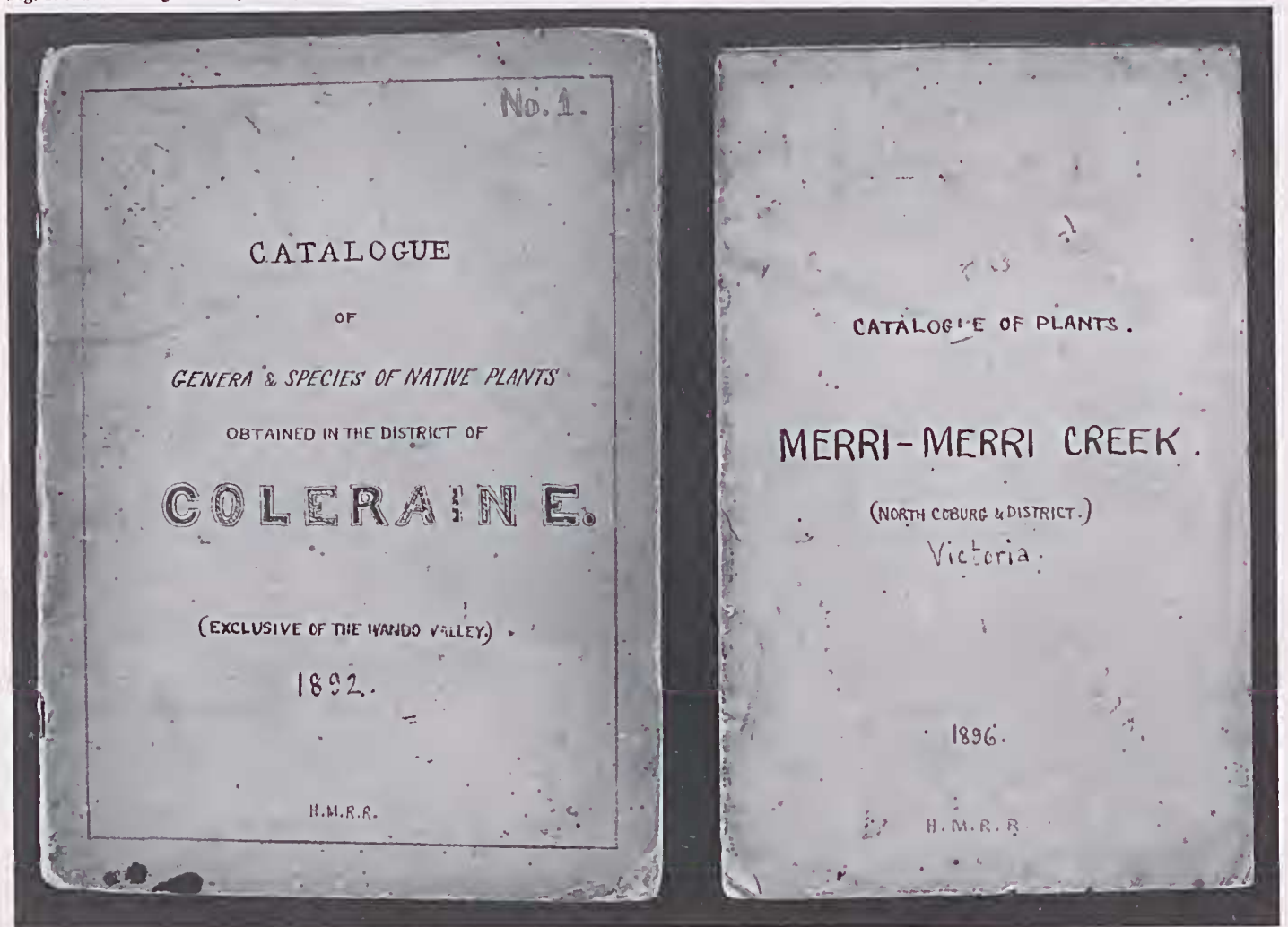


Fig.1. H. M. R. Rupp as a young man. (Photo courtesy of Mr M. D. de B. Collins Perse, Archivist at Geelong Grammar School, and Dr L. A. Gilbert.)

(University) has no such collection, if it were housed at Trinity it would merely mean that a large number of students not connected with the college would be continually resorting to Trinity in order to make use of it, and that it would be much more practical to have the collection in some central place where it would remain under expert supervision. Furthermore that the creation of such a nucleus would probably lead the University to add to it extensively, whereas if it remained in one college the prospects of such a development would be rather problematical' (Behan 1925). This prophecy was accurate, despite some lean times along the way.

Behan took a personal interest in the fate of Rupp's collection and was in touch with the first Professor of Botany at the University, Alfred James Ewart (1872-1937), over the wording of the inscription on the small brass plate commemorating the donation. It was Behan who informed Rupp when the collection arrived at Melbourne. Behan later wrote to Rupp on 7 August 1926 to say that, on Professor Ewart's invitation, he had visited the University to inspect the cabinet in which the herbarium would be housed. He described the cabinet in some detail and included the attached inscription. He suggested to Rupp: 'On the whole I think you would be very pleased with the way in which the Herbarium is to be housed, and even

Fig. 2. Plant catalogues compiled by the young H. M. R. Rupp.



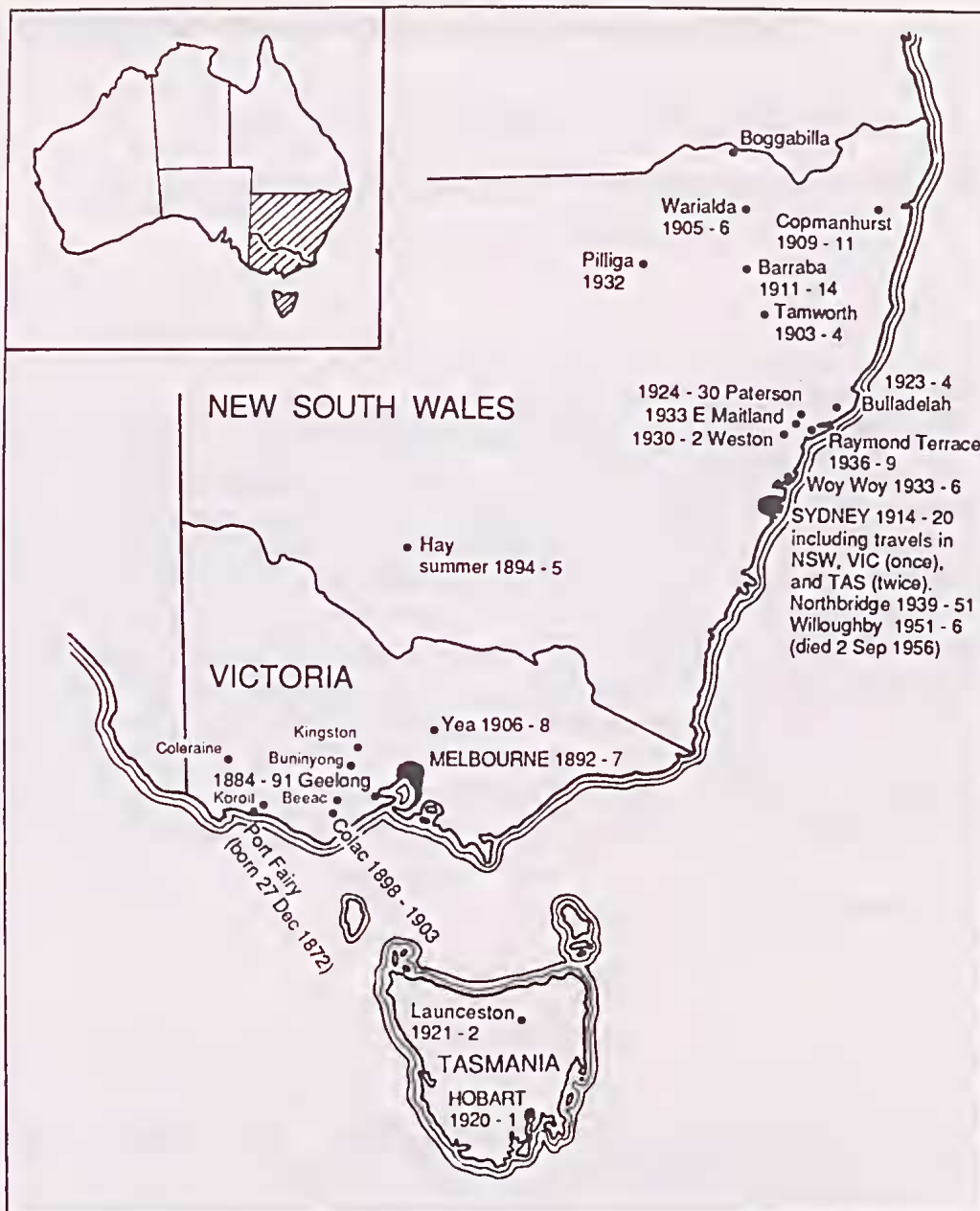


Fig. 3. Locations of H. M. R. Rupp's parishes etc. in SE Australia. Boggabilla on the Queensland border was the northern-most extent of his travels in the extensive parish of Wialda. Northbridge and Willoughby are suburbs of Sydney. (Compiled from Rupp 1926a, Willis 1956, and Gilbert 1988. Where differences occurred in dates or spellings of place names, those of Rupp are followed.)

more so at the obvious pride and delight which Professor Ewart's assistant felt in speaking of the matter' (Behan 1926). Rupp's reply included the comment: 'Perhaps I ought to be — but I am not — too modest to confess that I am very pleased to know how the gift is appreciated' (Rupp 1926b). Unfortunately the identity of Ewart's assistant remains in doubt.

Much of Rupp's notes and correspondence is enlivened by his wry sense of humour, although sometimes it is rather irreverent. In his manuscript entitled 'Notes on various plants' that accompanied the donation of his collection (Fig. 4), he writes under *Pterostylis*: 'The number of species of these Orchids appears to increase annually. The differences between some of them are slight and I sometimes wonder whether specific rank, like titles, is not being given away too freely. I have an idea which is possibly absurd — and possibly not — that the general appearance and habit of a plant should count for more than they do. But I may be a heretic' (Rupp 1926a). Rupp was acquainted with 37 species of

Pterostylis when this was written. Over 60 species are currently recognized (Baines 1981).

Rupp's specimens, numbering between three and four thousand, duly arrived in January 1926 in two large wooden packing cases each measuring about three feet by four feet by 18 inches. The Botany School Herbarium had indisputably begun, although the official starting date is recorded as 1929 coinciding with the opening of the Botany building.

Conclusive evidence of the existence of a herbarium in Ewart's department prior to Rupp's donation has not been found although it seems likely, and human memory and circumstantial evidence support this view. This is in conflict with Behan's comment to Rupp that such a collection did not then exist. Perhaps existing specimens were not seen as constituting a recognizable herbarium.

Two groups of specimens still in the herbarium support the existence of a pre-Rupp collection, based on the dates recorded on the specimen labels. It cannot be

NOTES ON VARIOUS PLANTS
REPRESENTED IN THE HERBARIUM OF THE REV.
H.M.R. RUPP, B.A.

FOREWORD.

As my herbarium is about to be presented to the Botany Department of the University of Melbourne, where I was a resident student of Trinity College from 1892-7, I have thought it as well to copy out some notes which I have jotted down at various times in comment upon some of the specimens. Except for some reserve specimens which I am now preparing, I am not including in the collection to be handed over to the University, any substantial assortment of Australian Orchids, of which I have herbarium specimens of about 220 species. These I am retaining, as I wish to continue the study of this fascinating order of plants. I have not, however, omitted from the Notes on Plants such as relate to Orchids; but have merely placed in brackets those which deal with species not represented in the Melbourne collection, as they may still be of some interest.

H.M.R.R.

Paterson, N.S.W., January 1926.

NOTES.

Acacia linearis, Sims. — *A. longifolia*, Willd. — In N.S.W. these two species seem to approach each other very closely, and I am doubtful of the herbarium determinations.

Acacia stricta, Willd. — In Tasmania I always found this species with very pale green ptyllodia; this is noticeable in comparison with

Fig. 4. Page 1 of H. M. R. Rupp's handwritten manuscript that accompanied the donation of his specimens to the University of Melbourne. As well as the 'Notes on various plants', it includes a list of localities, notes on the growth of his collection, species of interest in various parishes, lists of local plant names and contributors to his collection, and notes on plant distributions.

assumed however that they have always been held in the Botany School.

The first of these are a few Central Australian specimens collected in 1902 by Walter Baldwin Spencer (1860-1929). They bear original labels from the National Herbarium of New South Wales. Spencer was appointed Professor of Biology at the University of Melbourne in 1887. While best known as a zoologist and for his studies in anthropology based on travels in inland Australia (Mulvaney & Calaby 1985), he was also concerned that botany should receive due attention. In the preface to an introductory botany text written by two of his staff (Dendy and Lucas 1892) he

stresses the need for increased botany teaching and commends the book for its emphasis on the Australian flora.

Coming from Oxford, Spencer found that Melbourne University lagged behind the best British universities in the practical teaching of science and the pursuit of advanced research. This was not for lack of demand — in his first year more students undertook basic biology at Melbourne than at either Oxford or Manchester. Spencer's call for increased accommodation resulted in a new biology building on the north side of the lake. Mulvaney and Calaby (1985, p. 82) record that 'At the time the National Museum building

was the nearest neighbour, but because its collections were too valuable to be handled by students, Spenceer considered that teaching collections were essential and therefore must be accumulated in the department'. It was in this building that Professor Ewart was housed from 1906 until 1929, and it would have been easy for Spenceer's plant specimens to come into his possession.

The second group, a substantial number of specimens, bear original labels from the National Herbarium of Victoria. These include gatherings of many of the early collectors such as C. French (1840–1933), F. J. H. Mueller (1825–1896), F. M. Reader (?1850–1911), and C. Walter (1831–1907); the earliest that I have seen are two of Banks and Solander from the 1770s, and the latest dated 1920. The majority of these specimens appear to be duplicates prepared by J. W. C. Audas, possibly at Ewart's request. The exact timing of the specimens' arrival in the Botany School remains a mystery; it may be incorrect to assume that they came as one group. Ewart had arrived in Melbourne in 1905 to take up the appointments of Professor of Botany and Government Botanist at the beginning of the following year. Until the end of 1920, by which time the botany course at the University had grown to the extent that a full-time professor was required, he spent the mornings at the Botanic Gardens and the afternoons at the University. Ewart's dual role would have allowed the ready transfer of specimens from the State collection. Audas (1872–1959) was employed at the National Herbarium of Victoria from 1897 until his retirement in 1937.

Together these specimens form a representative sample of our botanical past, invaluable for invoking that indefinable feeling of history in those using the herbarium. I always enjoy the sense of wonder spontaneously expressed by students having opened a folder to see a specimen over a hundred years old and collected by Mueller.

Of all Ewart's scientific writings (some 156 publications), one third are concerned with the Australian flora. From 1921 onwards, when he would no longer have had such ready access to the National Herbarium, he continued to publish in the series 'Contributions to the Australian Flora' (Nos 30–36) in the *Proceedings of the Royal Society of Victoria*, and wrote the *Handbook of Forest Trees for Victorian Foresters* (1925) and the landmark *Flora of Victoria* (1931). Many members of staff and post-graduate students were involved in the preparation of these publications, including the *Flora*. Co-authors and assistants include E. M. Derriek, P. Jarrett, L. R. Kerr, E. I. McLennan, A. H. K. Petrie, E. J. Sonenberg, Mrs Thomson, and many illustrators. Numbers 30 and 31 in the 'Contributions' series were largely based on Ewart's collections made during field work in Central Australia in 1924. Ewart is also said to have amassed a sizeable collection during the preparation of the *Flora*, although it is unlikely that this was composed of all his own specimens. There is no conclusive evidence of such a 'Flora collection' remaining; the specimens from the National Herbarium of Victoria would be the only possibility. Relatively few Ewart specimens remain in the University collection.

The prevailing atmosphere of Ewart's department was clearly positive towards establishing relevant

botanical collections, which were not restricted to herbarium specimens. Older members of staff speak with regret of the disappearance of the botanical museum, once a showpiece of the department in the rooms now occupied by the library. It seems clear that Rupp's donation must have augmented an existing collection, whatever its size and content, and been the catalyst for the recognition of the herbarium in its own right.

Efforts to locate early departmental files of Ewart's time up to 1933 have failed and we have little record of day to day activity associated with the herbarium.

Presumably it was Ewart's initiative to establish the position of Honorary Keeper of the Herbarium, a post first held by H. B. Williamson (1860–1931) who was a schoolmaster and early botanical pioneer in Victoria (Willis 1949b). Williamson retired from full time teaching in 1925 and was appointed to the part-time position of Keeper four years later; he held the post until his death in early 1931. He was an active member of the Field Naturalists Club of Victoria and widely regarded as a committed educator.

In a letter quoted in the *Victorian Naturalist* journal of April 1931 (p. 203) he wrote: 'The importance of a position nowadays is gauged by the money hanging to it, and people are apt to look askance at anyone who does a job for the Government or an institution like the University for no fee. I've had several say, 'What are you getting out of it?' I welcome the appointment to the University because it will give me more scope for passing on advice and material gratis'.

He attended the University once a week and his initials on many herbarium specimens bear witness to this time. Although he and Ewart 'didn't get on particularly well' (E. J. Sonenberg, pers. comm.), Williamson is acknowledged as providing the account of the whole of the Leguminosae and for partial revision of the manuscript and proofs for Ewart's *Flora of Victoria* published in 1931.

Following Williamson the Honorary Keeper's position was taken up, apparently in 1933, by W. H. Nicholls (1885–1951) another spare-time botanist who left an enduring legacy (Willis 1949b, 1951). Nicholls worked as a bookbinder and later at the Footscray gardens and is well known in botanical circles for his monumental work *Orchids of Australia* (1969) finally published after his death. He travelled widely throughout the State and contributed many specimens to the collection. His exact period as keeper is unclear but letters to Ewart reporting some of his travels and collections exist up to mid 1936. Nicholls signed his letters as Honorary Curator — it seems these titles were used interchangeably.

Towards the end of Ewart's time, a forester stationed in the north west of the state, W. J. Zimmer (1898–1967), established contact with the department regarding his study of the flora of that region. Zimmer made a systematic collection of the mallee flora as part of his pioneering survey published in 1937. His work correlated vegetation types with soils as well as providing the first detailed plant census for the north west.

Zimmer's collection comprises nearly 700 specimens and includes a number of interesting early records. Old correspondence notes such discoveries as 'No. 658 *Pachycornia tenuis* — new record for the state', and 'No. 667 *Scaevola depauperata* — new

record for Victoria'. Lamentably, most of the specimen labels simply give Mildura as the locality, but in some cases a more accurate guide is given in the correspondence.

Zimmer's contributions spanned the end of Ewart's professorial reign (he died in office in 1937) and the beginning of that of the plant physiologist Dr J. S. Turner.

The few records that exist with respect to the herbarium during Professor Turner's term of office (1938–1973) such as acknowledgements of gifts, and notes of staff changes, paint a rather bland picture. The department was expanding and the prevailing atmosphere changing. Members of staff held strong views as to the nature and suitability of an herbarium for the Botany School. A recurrent feeling was that the herbarium should include strictly teaching material of Victorian species only, and locality collections useful in the preparation of excursions. Space for research collections after their immediate relevance was over, would not be made available. This feeling reached its height during the tenure of Dr R. L. Spccht as reader in the first half of the 1960s. He brought a strong ecological emphasis to the teaching of systematics, and plant collections were to include detailed ecological data on all specimen labels. A comprehensive series of specimens from Lake Mountain remain as his most tangible contribution.

Many specimens were removed from the department during the ten years or so after Ewart's death. Some of Rupp's NSW specimens have been relocated at the National Herbarium of Victoria. Much material was discarded (S. C. Ducker, pers. comm.) and but for the support of other members of staff, notably Dr McLennan, Mr Sonenberg, Dr Ducker and Dr Ashton, the collection might well have languished.

Dr Ethel McLennan had taken a more and more active hand in the running of the department in the later years of Ewart's term, and was Associate Professor from 1931. Her career in the Botany School spanned well over 50 years and she provided considerable support for the herbarium.

Ethel Irene McLennan (1891–1983) was born at Williamstown, Victoria and received her early education at Tintern Ladies College, Hawthorn. She later attended the University of Melbourne, graduating B.Sc. with first class honours and exhibition in 1914. She was appointed as demonstrator-lecturer in the Botany School in 1915, undertaking a full programme of teaching, and starting work on her first scientific publications. For her detailed study of the endophytic fungus associated with the rye-grass, *Lolium*, she was awarded the degree of D.Sc. in 1921 (Turner, 1983).

The main fungal herbarium numbering some 2,000 specimens was almost entirely accumulated under her direction. In a letter to C. G. Hansford at the Waite Agricultural Research Institute in 1952 she commented that: 'Our collection of fungi in this herbarium started with me. . .'. It obviously began a long while before the date of the letter; in September 1937 Ewart wrote to the chairman of the University finance committee requesting that additional storage be made available in the herbarium, mainly for the fungal collection. Dr McLennan was in touch with many of the prominent mycologists of the time — parcels of specimens were despatched regularly — and the her-

barium received the benefit of their expertise. Two of the more significant aspects of the collection are the gasteromycete and polypore specimens annotated by Dr G. H. Cunningham in New Zealand, and the agarics named by Professor J. B. Cleland (1878–1971).

Although officially retired in 1955, she continued working actively in the School of Botany until February 1957. This was some eight months after Miss Edith M. Packe had resigned from the position of herbarium assistant, which had followed her time at the Mildura campus of the University after the War. Miss Packe was responsible for the general maintenance of the herbarium and added numerous specimens from the Mildura area.

Seeking a replacement for Miss Packe, Professor Turner appointed Dr McLennan as 'Keeper of the Herbarium' in April 1957. This was a part-time position on a yearly salary of 300 pounds. She officially held this post for nearly 16 years and although not particularly active towards the end (by which time she was over 80 years old), she did much in the way of reorganization and general curatorial work, updating the nomenclature of the higher plants to conform to Willis' *Handbook* (1970, 1973) and establishing a sound basis for subsequent growth. She began the task of indexing and registering the entire herbarium, later completed by Mr J. Brown. The handwritten registry books bear witness to her patience and attention to detail.

It is a matter for conjecture what might have befallen the herbarium had not such an authoritative figure been at the helm for so many years. There is no doubt that the strength of the herbarium at the present time owes much to her efforts.

The encouragement given by Dr McLennan to all students, whether of the University, or amateurs, is often noted in writings documenting her career. Two striking examples of the flourishing of amateur abilities are seen in two series of paintings of fungi held in the herbarium. The first series, painted in the 1930's by Mr Malcolm Howie (1900–1936), comprises 84 plates, some of which include more than one species. These are copies executed by the artist at Dr McLennan's request; the original works are held by the artist's brother-in-law Dr J. H. Willis. Howie lived a tragically short but remarkable life in which he fought serious illness that threatened to paralyse him completely (Barrett 1936). He finally completed illustrations of some 200 species. Ewart wrote to the University registrar in August 1936 regarding the purchase of display cases for the drawings which he said 'are of considerable merit and are the property of the University'.

The second series of paintings, also of fungi, consists of over 200 working illustrations with accompanying descriptions. These were painted by Mrs Thelma Daniell in the 1950s and 60s and are mainly of the families Boletaceae and Amanitaceae (Fig. 5). Seeking recognition of their potential Dr McLennan wrote in a letter to Dr R. W. G. Dennis at the Royal Botanic Gardens, Kew, that the drawings were 'accurate and extensive', and sent copies for his use. More recently, in 1975, copies were requested by Dr R. Watling, mycologist at the Edinburgh Botanical Garden. Dr McLennan notes that Mrs Daniell began keeping specimens in October 1959. Her collections are now held in the National Herbarium of Victoria (J. H. Willis, pers. comm.); the

Family . BOLETACEAE R. Maire
 Subfamily . Boletoidae Speg.
 Genus . Boletus Dill. ex Fr. sec. Saccarinosi Fr.
 Species . multicolor Clel.
 Described . Cleland : The Larger Fungi of South Australia .
 Found . Creydon , Victoria , late May 1959 , two together ,
 near pines .
 Found by . Graeme Leano .
 Pileus . 60 m.m. smooth , moist , slightly convex , mustard
 brown with darker markings , staining bright green ,
 resting hymenophore evenly .
 Flesh . Thick , moist , yellow , deeper colour near outer
 surfaces , staining a little green in pileus and
 red in stipe .
 Hymenophore . 12 m.m. at widest , showing well below pileus ,
 deeply sulcate , bright yellow , turning mustard ,
 staining green ; pores bright lemon yellow , less
 than 1 m.m. wide , uneven honeycombed , staining
 bright green .
 Stipe . 12 x 45 m.m. widening to 14 m.m. then narrowing to
 a point , creamy to yellow , mealy at top , staining
 bright red where handled .
 Spores . Very pale gold under microscope x 750 , 8 x 5½ µ ,
 ovate .

Freehand drawing
 as observed

x750

not drawn to any scale

This *Boletus* appears close to *Boletus pulverulentus* Opat.



Fig. 5. Description and illustration of *Boletus multicolor* Clel. prepared by Mrs Thelma Daniell.

matching of specimens and illustrations would enhance the value of both.

In 1944 there arrived in the School of Botany someone who would later make a substantial contribution to the herbarium. Initially employed as a research assistant to Dr McLennan, Mrs Sophie Ducker completed a part-time B.Sc. degree in 1952, and the following year was appointed senior demonstrator. With Dr McLennan her work involved the maintenance of fungal cultures, including screening fungi for antibiotic activity following the discovery of penicillin, and the study of soil fungi from Victorian heathlands. Her papers on soil fungi together with her first algal work were submitted for the degree of M.Sc. in 1957. There followed appointments as lecturer, and then senior lecturer in 1961 (Rowan 1984).

Her main research field has been marine algae, particularly the siphonous green algae and later the corallines (e.g. Ducker 1967). Of significance was a substantial grant from the Melbourne and Metropolitan Board of Works in 1969 for a survey of Port Phillip Bay. Alongside this work was the establishment of the algal herbarium.

During this period she felt the need for formalizing the recognition of the herbarium and was instrumental in moves to include it in the *Index Herbariorum*, despite opposition from within the department. The School of Botany herbarium, with the code MELU, first appeared in the 6th edition in 1974, initial enquiries being made in 1965.

At the time of her retirement in 1974, the algal collection numbered some 15,000 specimens. The majority of these were from the Victorian coast and Bass Strait, with some overseas material included. Her

contributions, however, are not entirely restricted to algae — numerous fungal specimens and a collection from the Bogong High Plains bear her name. The High Plains collection was part of field work spanning more than a decade that involved many members of the department under the direction of Professor Turner and Mrs S. G. M. Carr (Carr & Turner 1959). In 1978 Dr Ducker's published work was accepted by the University of Melbourne for the degree of D.Sc.

In parallel with Ethel McLennan's academic career was that of Mr E. J. Sonenberg as a member of the technical staff. He joined the University as a junior assistant in 1922, the same year as did his mentor and influence for many years, ecologist Dr Reuben T. Patton (1883–1962). (Mr Sonenberg accompanied Patton on many of his travels and no doubt assisted with the collection of his specimens. Unfortunately Patton's collection was never fully curated and those specimens that were salvaged after his death were donated to the National Herbarium of Victoria (J. H. Willis, pers. comm.). Mr Sonenberg's preferred place was very much behind the scenes; he is a most self effacing person who does not readily take credit for his considerable contribution to the department spanning over 50 years. Mr Sonenberg began collecting for practical classes when 16 and the habit took such a firm hold that, 15 years after his retirement, students are still making use of materials he amassed. He became the mainstay of systematic botany teaching for over 40 years.

Collecting for the herbarium also started early — he recalls with some embarrassment his first efforts when asked to prepare pressed specimens of succulents such as *Sarcocornia* (*Salicornia*) without any prior instruc-

tion. 'After 3 days they were rather hairy'. Many of his collections are from the inner suburbs of Melbourne and document the suburban flora, particularly the weeds. The elegant and distinctive handwriting is a notable feature of his specimen labels. With a prodigious memory, he developed an authoritative knowledge of the Victorian flora, as well as of poisonous plants and exotics, that inspired a distinguished reputation within the department and the University. During the early 1950s Mr Sonenberg received assistance from Frank M. Nathan, a returned serviceman employed as a technical assistant. Frank Nathan's most evident contributions are his specimens from the Little Desert in Victoria.

The department receives numerous enquiries on all manner of botanical matters, and Mr Sonenberg was consulted almost daily by the University community, particularly the Faculties of Veterinary Science and Agriculture, by government authorities such as the Police, and by the general public. In about 1965 he completed a paper examining the components of hair balls extracted from the gut of sheep, following a veterinarian's enquiry. This was recommended for publication in the *Australian Veterinary Journal* but never printed. Some years before his retirement in 1973 concerted efforts were made to arrange the award of an honorary B.Sc. following an initiative of Dr McLennan. Mr Sonenberg declined it, 'I was blessed with a retentive memory, that's all'.*

By the mid 1970s the pendulum of botanical interests in the department was again swinging. Professor T. C. Chambers presided over a department more inclined towards the growth and development of the herbarium. He joined the Botany School in 1961 and took up the second Chair of Botany in 1966. For the next twenty years until his resignation in 1986, Professor Chambers provided a positive influence on attitudes towards the herbarium. During this period Dr D. H. Ashton has been one of the main contributors of specimens, from many parts of Victoria. He has also collected material, specifically for teaching, from wider afield. Gaining his B.Sc. in 1949 and Ph.D. in 1956, he joined the department as lecturer in 1960. The herbarium has received a steady input of specimens — flowering plants, bryophytes, lichens and fungi — reflecting his wide botanical interests, and keen eye enhanced by the artist's capacity for observation.

Following the official retirement of Ethel McLennan from the keeper's position in 1972, the day-to-day running of the herbarium fell to Mr E. J. Sonenberg, and in 1974 to Mr J. Brown until he in turn retired at the end of 1975. In recent years the Keeper's position has been filled by Dr S. L. Duigan, and since 1975 I have undertaken the daily responsibilities.

In the last decade, considerable additions have been made to the collections. In particular, three contemporary aspects of the herbarium represent history in the making.

The moss collection

Dr Ilma Stone was a student at the University of Melbourne between 1930 and 1932 and received her M.Sc. in 1934. After two years employment she devoted the next twenty years to marriage and family responsibilities,

returning to the Botany School in 1957 as a part-time demonstrator. She received her Ph.D. in 1963, and in 1969 turned her research attention to mosses. This was the beginning of a significant chapter in Australian bryology. She retired from her Research Fellowship in the School of Botany, which still involved active teaching, in December 1978, and from that time, as Senior Associate of the University, has actively continued her pioneering work. Travelling widely, with the support of her husband Alan, she has amassed a substantial collection of mosses from many parts of Australia. The publication of *The mosses of Southern Australia* with Dr George Scott and Celia Rosser in 1976 was a milestone in Australian bryological history. In almost 20 years of concentrated study she has contributed a number of revisions and published numerous papers describing 25 species, several genera and one family new to science. Since about 1980 the bulk of her moss collection, numbering more than 25,000 specimens, has been housed in the Botany School Herbarium.

The algal collection

Since 1974, Dr Gerry Kraft and his students have built on the foundation laid by Dr Sophie Ducker and established the algal collection as one of world class. The rich marine algal flora of southern Australia is extensively covered, and many other parts of the world are also represented. The taxonomy of the red algae has been a major line of research and the last fifteen years have seen over fifty new species described, with many more the subject of current research. The work of Dr Tim Entwisle represents a pioneering study in the documentation of Victorian species of freshwater algae, particularly those of the Yarra River catchment. His 800 specimens constitute the first systematic collection of this neglected group.

The fungal collection

Two mycologists, one amateur, one professional, have contributed to the growth of the fungal collection.

The recent death of Gordon William Beaton will be felt by mycologists around the world. His detailed studies as a gifted amateur mycologist have gained him an international reputation.

Born at Lismore, Victoria, on 14 June 1911, he received his early education at Booran, (near Camperdown), and at Noorat and Terang. He left school when 14 years old to work in a local bicycle shop, and later became a motor mechanic and garage proprietor. He retired in 1972 to Eildon in central Victoria.

Beaton was a first class marksman with a rifle and represented Victoria on a number of occasions. Through this interest he met H. T. Rees (1894–1963), a keen field naturalist, photographer and illustrator who introduced him to photography of botanical subjects. Initially attracted to the cup fungi, his frustration at the lack of references for their identification provoked his serious interest. He received advice and support from Dr McLennan and Dr Jim Willis, and from Dr R. W. G. Dennis of the Commonwealth Mycological Institute at Kew, England. Many of the fungi he collected had not been described. As mycology became his major interest, he acquired a good microscope and built up an excellent library of fungal literature. The centre of his interest moved over

* Ed. note: E. J. Sonenberg died on 5 April 1989.

the years from the Helotiales and Pezizales to the hypogean Gasteromycetes which were not well known.

In the last ten years, Gordon Beaton and his colleagues have published some thirty-five papers and named more than forty new species. Although he has described himself as 'not a collector' there are Beaton specimens in mycological collections in many parts of the world. The bulk of his material he kept at his home — in response to a questionnaire in 1980 he recorded the size of his collection at some 650 specimens — MELU held about 180, including over 25 types. He died on 2 April 1988 and his collection has now been donated to the Botany Herbarium.

Dr Haring Swart joined the staff of the Botany School in January 1966, having worked previously at the University of Witwatersrand in Johannesburg, South Africa. He came with a background in mycology and had studied South African soil fungi, particularly those of mangrove communities. In Australia he turned his particular attention to leaf-inhabiting fungi which were virtually untouched by previous taxonomists. The systematic study that was to occupy the next 22 years, produced a series of 30 papers on leaf-inhabiting fungi including descriptions of many new taxa. An outstanding feature of his work is the accompanying illustrations — he is one of the finest mycological illustrators. Examples of his drawings can be seen in the series of papers on Australian Leaf-inhabiting Fungi published in the *Transactions of the British Mycological Society* (e.g. Swart 1986a, b).

The majority of his type specimens are at the Biological and Chemical Research Institute at Rydalmere in NSW (DAR), and the remainder of his collection at MELU. It includes numerous microscope slides and drawings of Kew specimens prepared while on study leave in England in 1975, as well as some 400 specimens accumulated up until his retirement in 1987.

Conclusion

Historical papers such as those of J. H. Willis on Botanical Pioneers in Victoria (1949a,b,c), document the involvement of enthusiastic amateur botanists as well as professional workers. The School of Botany Herbarium likewise reflects the input of amateur and professional. It would be much the poorer without the work of amateurs such as Rupp, Williamson, Nicholls, Howie, Daniell and Beaton placed alongside that of their professional colleagues. In the case of the illustrators Howie and Daniell the value of their contribution has not been fully exploited. Without herbaria as storehouses for such work it is difficult to see how the efforts of these people would not be dissipated and fragmented with a consequent loss to the botanical cause.

In April 1977 while working on the genus *Pultenaea*, Mrs Margaret Corriek (then at the National Herbarium of Victoria) identified a number of valuable specimens in MELU including syntypes previously unrecognized. This reflects badly on previous ill-conceived actions in discarding material without due thought for the future. What may have been lost?

It is not easy to evaluate the smaller institutional herbaria but they play an important role; a herbarium of the size and historical interest of MELU, representing the accumulated efforts of trained botanists and

knowledgeable amateurs over more than sixty years, is irreplaceable and invaluable. It is a small piece in the unfolding jigsaw that is Australian Botany. Each piece has its allotted place.

This paper does not present the complete story; time for extensive research spanning years was not available. The omission of any contribution is not based on a judgement of value.

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References

- Baines, J. A. (1981). *Australian Plant Genera*. (Society for Growing Australian Plants: Picnic Point, NSW.).
- Barrett, C. (1936). A Painter of Fungi. *Victorian Naturalist* 53: 19–22.
- Behan, J. C. V. (1925). Unpublished letter to H. M. R. Rupp dated 16 December 1925. Archives of Trinity College, University of Melbourne.
- Behan, J. C. V. (1926). Unpublished letter to H. M. R. Rupp dated 7 August 1926. Archives of Trinity College, University of Melbourne.
- Carr, S. G. M. & Turner, J. S. (1959). The Ecology of the Bogong High Plains. *Aust. J. Bot.* 7: 12–63.
- Dendy, A. & Lucas, A. H. S. (1892). *An Introduction to the Study of Botany*. (Melville, Mullen & Slade: London).
- Ducker, S. C. (1967). The genus *Chlorodesmis* (Chlorophyta) in the Indo-pacific region. *Nova Hedwigia* XIII, 1/2: 145–82, 19 plates.
- Ewart, A. J. (1936). Unpublished letter to the Registrar, University of Melbourne dated 10 August 1936. The University of Melbourne Archives; Botany.
- Gilbert, L. A. (1988). Rupp, Herman Montague Rucker. In Scoble, G. (ed.), *Australian dictionary of biography*, vol. 11. (Melbourne University Press.) pp. 480–1.
- Mulvaney, D. J. and Calaby, J. H. (1985). 'So much that is new'. *Baldwin Spencer, 1860–1929. A biography*. (Melbourne University Press).
- Nicholls, W. H. (1969). *Orchids of Australia*. (Nelson: Melbourne).
- Rowan, K. S. (1984). A Tribute to Dr Sophie C. Ducker. *Phycologia* 23: 1–2.
- Rupp, H. M. R. (1926a). *Notes on various plants*. . . Unpublished manuscript held in MELU (without pagination).
- Rupp, H. M. R. (1926b). Unpublished letter to Dr J. C. V. Behan dated 12 August 1926. Archives of Trinity College, University of Melbourne.
- Scott, G. A. M., Stone, I. G. & Rosser, C. (1976). The mosses of Southern Australia. (Academic press: London).
- Swart, H. J. (1986a). Australian Leaf-inhabiting Fungi - XXII. *Microthyrium*-like fungi on *Eucalyptus*. *Trans. Brit. Mycol. Soc.* 87: 81–91.
- Swart, H. J. (1986b). Australian Leaf-inhabiting Fungi - XXIV. *Coma acicularis* and its teleomorph. *Trans. Brit. Mycol. Soc.* 87: 603–612.
- Turner, J. S. (1983). Obituary — Associate Professor Ethel McLennan. *University of Melbourne Gazette* 39: 12–13.
- Willis, J. H. (1949a). Botanical Pioneers in Victoria — I. *Victorian Naturalist* 66: 83–9.
- Willis, J. H. (1949b). Botanical Pioneers in Victoria — II. *Victorian Naturalist* 66: 103–9.
- Willis, J. H. (1949c). Botanical Pioneers in Victoria — III. *Victorian Naturalist* 66: 123–8.
- Willis, J. H. (1951). Vale, William Henry Nicholls. *Victorian Naturalist* 67: 241–3.
- Willis, J. H. (1956). The Passing of a Great Orchidologist (Rev. H.M. R. Rupp, 1872–1956). *Victorian Naturalist* 73: 105–10.
- Willis, J. H. (1970, 1973). *A Handbook to Plants in Victoria*. Vols 1 & 2. (Melbourne University Press).
- Zimmer, W. J. (1937). *The Flora of the Far North-west of Victoria*. Forests Commission of Victoria, Bulletin No. 2.